NC/QC/YD/2020-21/W3-VN2-G1 Date: 05-07-2021

TEST REPORT ON GRANULAR SUBBASE MIX
(GRADATION TEST)

Sub: To conduct tests on GSB (Grade-V) mix.
{Project*: Improvements to roads and Drains at Viswanagara in ward no-03 of Yelahanka Satellite Town Sub Division.}
Ref.: Material testing/PMC/20-21,
Report Required for: Assistant Executive Engineer,
Yelahanka Satellite Town Sub Division,
BBMP, Bangalore.
Name of the Agency/Contractor*: Sri Sridhar. Y. R, Bangalore.

TEST RESULTS

1. **Gradation Test:**
TABLE 1.1

Sieve Size mm	Percent by Weight passing the Sieve from the sample supplied (Obtained Gradation)	Specified Limits as per MoRTH Specifications, V Revision-2013
53.00	100.00	100
26.50	97.10	70-100
9.50	71.95	50-80
4.75	52.05	40-65
2.36	39.40	30-50
0.425	13.10	10-15
0.075	2.85	<5

The result of the materials tested meets the standards and hence can be used for the work.
Sample Collected Site : Rajeevgandhi Nagara Main Rd

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EMAIL:newzen576@gmail.com

Date: 05-07-2021

TABLE 1.2

SL No	Test conducted	Test Results	Tests Conforms to IS 2386(Part I to IV)– 1963 (Reaffirmed on 2002) & Requirements as per IS 383-1970 & M.o.R.T.H Specification, V Revision -2013.
1.	Water absorption, %	**0.44 %**	Not more than 2.0 %
2.	Liquid Limit, %	**19.12**	Not more than 25.0 %
3.	Plasticity Index, %	**NP**	Not more than 6.0 %
4.	Moisture Content, %	**6.47**	----------
5.	Aggregate Impact Value, %	**28.16**	Not more than 40 00 %

The result of the materials tested meets the standards and hence can be used for the work.
Sample Collected Site : Rajeevgandhi Nagara Main Rd

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Date: 08-07-2021

TABLE 1.2

SL No	Test conducted	Test Results	Tests Conforms to IS 2386(Part I to IV)– 1963 (Reaffirmed on 2002) & Requirements as per IS:383-1970 & M.o.R.T.H Specification, V Revision -2013.
1.	Aggregate Impact Value	**27.16 %**	Not more than 30.00 %
2.	Combined Flakiness and Elongation index, %	**28.41 %**	Not more than 35.0 %
3.	Water absorption, %	**0.42 %**	Not more than 2.0 %
4.	Plasticity Index, %	**NP**	Not more than 6.0 %

The result of the materials tested meets the standards and hence can be used for the work.
Sample Collected Site : Rajeevgandhi Nagara Main Rd

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NC/QC/YD/2020-21/W3-VN2-BD1 **Date: 26-07-2021**

1. TEST REPORT ON BITUMEN SAMPLE:

Sub: Testing of Bitumen sample VG-30 Grade.
{Project*: Improvements to roads and Drains at Viswanagara in ward no-03 of Yelahanka Satellite Town Sub Division.}
Ref.: Material testing/PMC/20-21,
Report Required for: Assistant Executive Engineer,
Yelahanka Satellite Town Sub Division,
BBMP, Bangalore.
Name of the Agency/Contractor*: Sri Sridhar. Y. R, Bangalore.
Technical Reference: Ministry of Road Transport and Highways, V Revision, 2013 and IS 73: 1992.

TABLE 1.1 ;

SL No	Details	Test Results	Requirements as per I.S 73 –1992 Specifications
1.	Penetration at 25^0 C	**52.95^0 C**	Min. 45
2.	Ductility Value at 25^0 C	**106.20 cm**	40
3.	Flash point	**247^0 C**	Minimum 220^0 C
4.	Softening point	**51.8^0 C**	Min. 47

The result of the materials tested meets the standards and hence can be used for the work.
Sample Collected Site : Rajeevgandhi Nagara Main Rd

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NC/QC/YD/2020-21/W3-VN2-DBM2 **Date: 28-07-2021**

1.TEST REPORT ON BITUMINOUS MIXES :

(BITUMEN EXTRACTION TEST & GRADATION TEST)

Sub: To determine the percentage of bitumen and gradation for DBM mix sample.

{Project*: Improvements to roads and Drains at Viswanagara in ward no-03 of Yelahanka Satellite Town Sub Division.}

Ref.: Material testing/PMC/20-21,

Report Required for: Assistant Executive Engineer,
Yelahanka Satellite Town Sub Division,
BBMP, Bangalore.

Name of the Agency/Contractor*: Sri Sridhar. Y. R, Bangalore.

TEST RESULTS

A. Type of Construction : **Dense Graded Bituminous Macadam.**

1. The bitumen content obtained after subjecting the sample for Bitumen Extraction test = **4.53 %**

2. **Gradation Test**

TABLE 1.1

Sieve Size, mm	Percent by Weight passing the Sieve from the sample supplied (Obtained Gradation)	Gradation requirement as per Table 500-10 of MORTH Specfications-2013 DBM (Grading - 2)
37.5	100	100
26.5	95.30	90-100
19.0	79.20	71-95
13.20	64.85	56-80
4.75	46.30	38-54
2.36	33.45	28-42
0.300	14.60	7-21
0.075	6.95	2-8

The result of the materials tested meets the standards and hence can be used for the work.

Sample Collected Site : Rajeevgandhi Nagara Main Rd

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NC/QC/YD/2020-21/W3-VN2-BB1 Date: 28-07-2021

1. TEST REPORT ON BITUMEN SAMPLE:

Sub: Testing of Bitumen sample VG-30 Grade.
{Project*: Improvements to roads and Drains at Viswanagara in ward no-03 of Yelahanka Satellite Town Sub Division.}
Ref.: Material testing/PMC/20-21,
Report Required for: Assistant Executive Engineer,
Yelahanka Satellite Town Sub Division,
BBMP, Bangalore.
Name of the Agency/Contractor*: Sri Sridhar. Y. R, Bangalore.
Technical Reference: Ministry of Road Transport and Highways, V Revision, 2013 and IS 73: 1992.

TABLE 1.1 ;

SL No	Details	Test Results	Requirements as per I S 73 –1992 Specifications
1.	Penetration at 25^0 C	**51.20^0 C**	Min. 45
2.	Ductility Value at 25^0 C	**105.0 cm**	40
3.	Flash point	**239^0 C**	Minimum 220^0 C
4.	Softening point	**50.40^0 C**	Min. 47

. The result of the materials tested meets the standards and hence can be used for the work.
Sample Collected Site : Rajeevgandhi Nagara Main Rd

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NC/QC/YD/2020-21/W3-VN2-CB1 **Date: 28-07-2021**

1. TEST REPORT ON COARSE AGGREGATE:

Sub: Testing of Coarse Aggregate used in Bituminous Concrete.
{Project*: Improvements to roads and Drains at Viswanagara in ward no-03 of Yelahanka Satellite Town Sub Division.}
Ref.: Material testing/PMC/20-21,
Report Required for: Assistant Executive Engineer,
Yelahanka Satellite Town Sub Division,
BBMP, Bangalore.
Name of the Agency/Contractor*: Sri Sridhar. Y. R, Bangalore.

TABLE 1.1 ;

SL No	Test conducted	Test Results	Tests Conforms to IS 2386(Part I to IV)– 1963 (Reaffirmed on 2002) & Requirements as per IS 383-1970 & MoRTH Specification, V Revision -2013.
1.	Aggregate Impact Value	**23.03 %**	Not more than 24 00 %
2.	Combined Flakiness and Elongation index, %	**27.14 %**	Not more than 35 0 %
3.	Water absorption, %	**0.42 %**	Not more than 2.0 %
4.	Specific gravity	**2.61**	-------
5.	Soundness	**5.43 %**	Max. 12 % in Sodium Sulphate

. The result of the materials tested meets the standards and hence can be used for the work.
Sample Collected Site : Rajeevgandhi Nagara Main Rd

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NC/QC/YD/2020-21/W3-VN2-BC1 Date: 29-07-2021

1.TEST REPORT ON BITUMINOUS MIXES :

(BITUMEN EXTRACTION TEST & GRADATION TEST)

Sub: To determine the percentage of bitumen and gradation for BC mix sample.

{Project*: Improvements to roads and Drains at Viswanagara in ward no-03 of Yelahanka Satellite Town Sub Division.}

Ref.: Material testing/PMC/20-21,

Report Required for: Assistant Executive Engineer,
Yelahanka Satellite Town Sub Division,
BBMP, Bangalore.

Name of the Agency/Contractor*: Sri Sridhar. Y. R, Bangalore.

TEST RESULTS

A. Type of Construction : **Bituminous Concrete**

1. The bitumen content obtained after subjecting the sample for Bitumen Extraction test = **5.42 %**

2. **Gradation Test**

TABLE 1.1

Sieve Size, mm	Percent by Weight passing the Sieve from the sample supplied (Obtained Gradation)	Gradation requirement as per Table 500-17 of MORTH Specfications-2013 BC (Grading - 2)
19.0	100	100
13.2	97.10	90-100
9.5	86.60	70-88
4.75	62.20	53-71
2.36	54.65	42-58
1.18	37.05	34-48
0.600	30.75	26-38
0.300	22.40	18-28
0.150	17.05	12-20
0.075	7.85	4-10

The results of the materials tested meets the standards and hence can be used for the work.

Sample Collected Site : Rajeevgandhi Nagara Main Rd

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NC/QC/YD/2020-21/W3-VN2-BC2 Date: 30-07-2021

1.TEST REPORT ON BITUMINOUS MIXES :

(BITUMEN EXTRACTION TEST & GRADATION TEST)

Sub: To determine the percentage of bitumen and gradation for BC mix sample.

{Project*: Improvements to roads and Drains at Viswanagara in ward no-03 of Yelahanka Satellite Town Sub Division.}

Ref.: Material testing/PMC/20-21,

Report Required for: Assistant Executive Engineer,
Yelahanka Satellite Town Sub Division,
BBMP, Bangalore.

Name of the Agency/Contractor*: Sri Sridhar. Y. R, Bangalore.

TEST RESULTS

A. Type of Construction : **Bituminous Concrete**

1. The bitumen content obtained after subjecting the sample for Bitumen Extraction test = **5.41%**

2. **Gradation Test**

TABLE 1.1

Sieve Size, mm	Percent by Weight passing the Sieve from the sample supplied (Obtained Gradation)	Gradation requirement as per Table 500-17 of MORTH Specfications-2013 BC (Grading - 2)
19.0	100	100
13.2	97.20	90-100
9.5	82.90	70-88
4.75	63.25	53-71
2.36	54.60	42-58
1.18	39.85	34-48
0.600	32.10	26-38
0.300	20.25	18-28
0.150	13.80	12-20
0.075	5.35	4-10

The result of the materials tested meets the standards and hence can be used for the work.

Sample Collected Site : Rajeevgandhi Nagara Main Rd

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NC/QC/YD/2020-21/W3-VN2-BS2 Date: 30-07-2021

1.TEST REPORT ON BITUMINOUS MIXES :

(STABILITY OF BITUMINOUS MIX)

Sub: To determine the stability of bituminous mix for BC mix sample.

{Project*: Improvements to roads and Drains at Viswanagara in ward no-03 of Yelahanka Satellite Town Sub Division.}

Ref.: Material testing/PMC/20-21,

Report Required for: Assistant Executive Engineer,
Yelahanka Satellite Town Sub Division,
BBMP, Bangalore.

Name of the Agency/Contractor*: Sri Sridhar. Y. R, Bangalore.

TEST RESULTS

Table 1: Properties of BC (Gr-2) Mix

Sl. No.	Test Property	*Test results obtained by Marshall method	Requirements of Bituminous Concrete, Grade-2 as per M.o.R.T&H (V Revision)-2013 Specifications
1	Marshall Stability (75 blows) (At 60°C), kgs.	1374	900
2	Marshall Flow at 60°C, mm.	3.16	2.0 - 4.0

The result of the materials tested meets the standards and hence can be used for the work.

Sample collected Site : Rajeevgandhi Nagara Main Rd

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NC/QC/YD/2020-21/W3-VN2-BS3 **Date: 30-07-2021**

1.TEST REPORT ON BITUMINOUS MIXES :
(STABILITY OF BITUMINOUS MIX)

Sub: To determine the stability of bituminous mix for BC mix sample.
{Project*: Improvements to roads and Drains at Viswanagara in ward no-03 of Yelahanka Satellite Town Sub Division.}
Ref.: Material testing/PMC/20-21,
Report Required for: Assistant Executive Engineer,
Yelahanka Satellite Town Sub Division,
BBMP, Bangalore.
Name of the Agency/Contractor*: Sri Sridhar. Y. R, Bangalore.

TEST RESULTS

Table 1: Properties of BC (Gr-2) Mix

Sl. No.	Test Property	*Test results obtained by Marshall method	Requirements of Bituminous Concrete, Grade-2 as per M.o.R.T&H (V Revision)-2013 Specifications
1	Marshall Stability (75 blows) (At 60°C), kgs.	1349	900
2	Marshall Flow at 60°C, mm.	3.22	2.0 - 4.0

The result of the materials tested meets the standards and hence can be used for the work.
Sample Collected Site : Rajeevgandhi Nagara Main Rd

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